



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/935,897

08/23/2001

John W. Evans

97541.00012

2267

21832 7590 09/25/2007
MCCARTER & ENGLISH LLP
CITYPLACE I
185 ASYLUM STREET
HARTFORD, CT 06103

EXAMINER

DELCOTTO, GREGORY R

ART UNIT

PAPER NUMBER

1751

MAIL DATE

DELIVERY MODE

09/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/935,897

Applicant(s)

EVANS ET AL.

Examiner

Gregory R. Del Cotto

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 41-43 are pending. Claims 1-40 have been canceled. Applicant's arguments and amendments filed 6/29/07 have been entered.

Objections/Rejections Withdrawn

The following objections/rejection(s) as set forth in the Office action mailed 10/4/06 have been withdrawn:

The rejection of claims 30-32 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, has been withdrawn.

The rejection of claims 22, 26, and 30 under 35 U.S.C. 102(b) as being anticipated by Wiesenfeld et al (US 5,935,488) has been withdrawn.

The rejection of claim 27 under 35 U.S.C. 103(a) as being unpatentable over Wiesenfeld et al (US 5,935,488) has been withdrawn.

The rejection of claims 22, 26, 27, and 31 under 35 U.S.C. 103(a) as being unpatentable over WO 89/09806 has been withdrawn.

The rejection of claims 22, 26, and 27 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 27-50 of 09/910497 and claims 30-33 of 09/935982 has been withdrawn.

The rejection of claims 22, 26, 27, and 30 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9, 11, and 12 of copending Application No. 10/264041 has been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 41 is rejected under 35 U.S.C. 102(b) as being anticipated by Hu et al (US 5,817,252) in light of Mendoza (US 5,484,547) or Meyer et al (US 5,118,434).

Hu et al teach a deicing and anti-icing composition for aircraft surfaces including a base compound being propylene glycol and/or ethylene glycol in the range of 35% to 80% by weight of the composition. A diluent is included in the form of water for use as a carrier fluid for the glycol. See Abstract. The water used in the composition having both ethylene glycol and propylene glycol has the diluent water in an overall range of 20% to 65% by weight of the composition. See column 5, lines 20-45.

Specifically, Hu et al teach compositions containing 1% propylene glycol, 79% ethylene glycol, 19.5% water, 0.171% lower MW nonionic, 0.012% higher MW nonionic, and 0.184% polycarboxylate and compositions containing 1% propylene glycol, 34% ethylene glycol, 64.5% water, 0.171% lower MW nonionic, 0.012% higher MW nonionic, and 0.184% polycarboxylate. Note that, the Examiner asserts that the compositions taught by Hu et al would inherently have the same reduced oral toxicity as the composition recited by the instant claims because Hu et al teach compositions containing the same components in the same amounts as recited by the instant claims. Further, the Examiner asserts, as evidenced by Meyer et al and Mendoza, that the deicing fluids as disclosed by Hu et al would inherently also function as heat transfer fluids. Note that, Mendoza teaches that glycol based fluids are useful as both heat transfer fluids and deicing fluids. See Abstract and column 1, lines 45-50 of Mendoza. Furthermore, Meyer et al teach glycol based compositions which are useful as antifreeze fluids in heat-transfer applications or as deicing fluids for aircrafts. Thus, the

Art Unit: 1751

Examiner asserts that the glycol-based compositions as taught by Hu et al would inherently fall under the broad category of "heat transfer fluid" as recited by the instant claims. Hu et al discloses the claimed invention with sufficient specificity to constitute anticipation.

Accordingly, the teachings of Hu et al disclose the claimed invention with sufficient specificity to constitute anticipation.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al (5,817,252).

Hu et al are relied upon as set forth above. However, Hu et al do not teach, with sufficient specificity, a composition containing propylene glycol such that the sum of propylene glycol in the resulting mixture is about 5 weight percent of the sum of the total weight of ethylene glycol and propylene glycol in the mixture as recited by the instant claims.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to formulate a composition containing propylene glycol such that the sum of propylene glycol in the resulting mixture is about 5 weight percent of the sum of the total weight of ethylene glycol and propylene glycol in the mixture as recited by the instant claims, with a reasonable expectation of success, because the broad teachings of Hu et al suggest a composition containing propylene glycol such that the sum of propylene glycol in the resulting mixture is about 5 weight percent of the sum of the total weight of ethylene glycol and propylene glycol in the mixture as recited by the instant claims.

Claims 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer et al (US 5,118,434) or Maes et al (US 5,366,651).

Meyer et al teach antifreeze fluids containing 50 to 99 percent by weight of one or more glycols, 0.001 to 15 percent by weight of one or more corrosion inhibitors, 25 to 2500 parts of a polymeric additive, and optionally, up to 50 percent by weight of water. See column 1, line 50 to column 2, line 5. Suitable glycols include ethylene glycol, propylene glycol, etc. See column 2, lines 40-60.

Maes et al teach antifreeze concentrates containing a water-soluble liquid alcohol freezing point depressant and a corrosion inhibitor comprising carboxylic acids or their salts and a triazole compound. See column 2, lines 55-69. Suitable freeze point depressants include glycols such as ethylene glycol, propylene glycol, etc. The composition contains from 10 to 90% by weight water and 25% to 50% by weight of a water-soluble liquid alcohol freezing point depressant. See column 3, line 65 to column 4, line 20.

Note that, the Examiner asserts that the broad teachings of Meyer et al or Maes et al would suggest compositions having reduced toxicity because Meyer et al or Maes et al suggest compositions containing the same components in the same proportions as recited by the instant claims.

Meyer et al or Maes et al do not teach, with sufficient specificity, a method of reducing the oral toxicity of aqueous fluids containing ethylene glycol by mixing with ethylene glycol a specific diol such as propylene glycol in the specific proportions as recited by the instant claims.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to reduce the oral toxicity of aqueous fluids containing ethylene glycol by mixing with ethylene glycol a specific diol such as propylene glycol in the specific proportions as recited by the instant claims, with a reasonable expectation of success, because the teaching of Meyer et al or Maes et al suggest reducing the oral toxicity of aqueous fluids containing ethylene glycol by mixing with ethylene glycol a specific diol such as propylene glycol in the specific proportions as recited by the instant claims.

Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen (US 4,728,452) or Wood (US 4,455,248).

Hansen teaches a coolant concentrate comprising water, at least 10% by weight of a water soluble nitrite, 0.2 to 2% by weight of at least one water soluble azole, and 0.1 to 1% by weight of a water soluble molybdate. See abstract. The coolant concentrate may be totally aqueous or may contain freezing point depressing amounts of at least one alcohol, at least one glycol, or mixtures of one or more alcohol and glycol. The alcohol, glycol or alcohol-glycol mixture may comprise about 20% to 90% by weight of the aqueous concentrate. Suitable glycols include ethylene glycol, propylene glycol, glycerol, etc. See column 3, lines 25-50.

Wood teaches a single-phase glycol based antifreeze composition containing one or more glycols selected from the group consisting of ethylene glycol, propylene glycol, glycerol, etc., and additionally comprising for every 100 parts by weight of said alcohol, 0.1 to 500 parts by weight water, 0.05 to 0.3 parts by weight of sodium

metasilicate, from 1.2 to 4.0 parts by weight of a phosphate of potassium, from 0.15 to 0.5 parts of sodium metaborate, etc. See column 2, lines 25-45.

Note that, the Examiner asserts that the broad teachings of Hansen or Wood would suggest compositions having reduced toxicity because Hansen or Wood suggest compositions containing the same components in the same proportions as recited by the instant claims.

Hansen or Wood do not teach, with sufficient specificity, a method of reducing the oral toxicity of aqueous fluids containing ethylene glycol by mixing with ethylene glycol a specific diol such as propylene glycol in the specific proportions as recited by the instant claims.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to reduce the oral toxicity of aqueous fluids containing ethylene glycol by mixing with ethylene glycol a specific diol such as propylene glycol in the specific proportions as recited by the instant claims, with a reasonable expectation of success, because the teachings of Hansen or Wood suggest reducing the oral toxicity of aqueous fluids containing ethylene glycol by mixing with ethylene glycol a specific diol such as propylene glycol in the specific proportions as recited by the instant claims.

Response to Argument

With respect to Hu et al, Applicant states that Hu et al do not describe or suggest using their fluids as heat transfer fluids and in general, deicing and antiicing fluids are too viscous for use as a fluid to be circulated in an engine cooling system. Additionally, Applicant states that the viscosity of the fluid as taught by Hu et al would be too high to

Art Unit: 1751

use a heat transfer fluid and that the deicing composition of Hu et al must include a polymeric thickener which cannot be included in the heat transfer fluid of claims 41-43. Furthermore, Applicant states that none of the heat transfer fluids according to the instant claims have viscosities exceeding 100 cps at minus 20 degrees Celsius. In response, note that, as stated above, Mendoza (US 5,484,547) or Meyer et al (US 5,118,434) teach that glycol based fluids may be used as both heat transfer fluids or deicing fluids and thus, the Examiner asserts that the composition as taught by Hu et al would fall under the broad category of "heat transfer fluid" as recited by the instant claims. Further, the instant claims recite "comprising" or "containing" which does not exclude the presence of a polymeric thickener as taught by Hu et al, and the instant claims recite no limitations with respect to the viscosity of the heat transfer fluid or use of the heat transfer fluids such that all heat transfer fluids, including those having a high viscosity at low temperatures, would be encompassed by the instant claims. Thus, the Examiner asserts that the teachings of Hu et al anticipate the material limitations of the instant claims.

With respect to the reduced toxicity of the composition as recited by the instant claims, note that, the discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer. Atlas Powder Co. V. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195

USPQ 430, 433 (CCPA 1977); In re Crish, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004). See MPEP 2112.

With respect to '806, Maes et al, Meyer et al, Hansen, or Wood, Applicant once again states none of these references describe a method for reducing the oral toxicity of an ethylene glycol based heat transfer fluid by adding a second glycol as recited by the instant claims and none of these references teach combining ethylene glycol and a second glycol in the specific proportions as recited by the instant claims. Additionally, Applicant once again states that it is a mere possibility that the compositions as taught by '806, Maes et al, Meyer et al, Hansen, or Wood might have reduced toxicity as recited by the instant claims. In response, note that, the Examiner asserts that '806, Maes et al, Meyer et al, Wood, or Hansen clearly suggest compositions having the same reduced toxicity as the recited by the instant claims because '806, Maes et al, Meyer et al, Wood, or Hansen suggest compositions which are heat transfer fluids containing the same components in the same proportions as recited by the instant claims. The teachings of '806, Maes et al, Meyer et al, Wood, or Hansen suggest varying amounts of glycol ethers which would suggest to one of ordinary skill in the art to formulate a composition containing the same proportion of ethylene glycol and second glycol as recited by the instant claims. Additionally, although '806, Maes et al, Meyer et al, Wood, or Hansen do not make specific mention of reduced toxicity properties, the Examiner asserts, once again that the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the

Art Unit: 1751

same advantage or result discovered by applicant. See MPEP 2144; In re Linter, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972).

With respect to Maes et al, Applicant once again states that there is a distinction between glycols and glycol ethers. In response, note that, Maes et al teach that suitable glycols include ethylene glycol and propylene glycol (See column 4, lines 1-10) and the Examiner asserts that one skilled in the art would be motivated to use a combination of both ethylene and propylene glycol. Note that, It is prima facie obvious to combine two compositions, each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose...[T]he idea of combining them flows logically from their having been individually taught in the prior art. In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP 2144.06.

Additionally, Applicant has reiterated that on pages 17-21 of the specification, unexpected and superior results of the claimed invention are shown with respect to toxicity. A prior art rejection has been made under 35 USC 102(b) as set forth above, and secondary considerations such as evidence showing unexpected and superior results is not sufficient to overcome rejections under 35 USC 102 for anticipation. Furthermore, even if the teachings of Hu et al were not sufficient to reject the claims under 35 USC 102, which the Examiner is clearly not conceding, Examiner asserts, as stated previously, that this data is insufficient to overcome the prior art rejections applied above. As stated previously, it is unclear to the Examiner exactly what unexpected results are being shown; it seems that one of ordinary skill in the art would

Art Unit: 1751

reasonably expect that the toxicity of ethylene glycol would be reduced when combined with propylene glycol since propylene glycol is much less toxic than ethylene glycol. Thus, the data does not appear to show any unexpected and superior results but just merely shows what would be expected.

With respect to the Declaration filed under 37 CFR 1.132 submitted on 6/29/07, the Examiner asserts that this Declaration is not sufficient to overcome the prior art rejections as set forth above. The Declaration states, similar to the response, that at low temperatures such as minus 20 degrees Celsius, there is no combination of polyhydric alcohols and water according to the instant claims that yields a viscosity as great as 100 cps at minus 20 degrees Celsius. In response, note that, as evidenced above, the Examiner maintains that the deicing fluid of Hu et al, for example, would inherently function as a heat transfer fluid and would fall under the generic category of "heat transfer fluid" as recited by the instant claims. The instant claims do not require that the heat transfer fluid have any particular viscosity at a certain temperature such that all heat transfer fluids, including those having a high viscosity at low temperatures, would be encompassed by the instant claims. Further, the Examiner asserts that the Declaration filed under 37 CFR 1.132 provides only conclusions and opinion evidence and although an affidavit or declaration which states only conclusions may have some probative value, such an affidavit or declaration may have little weight when considered in light of all the evidence or record in the application. In re Brandstadter, 484 F.2d 1395, 179 USPQ 286 (CCPA 1973). See MPEP 716.01(c).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory R. Del Cotto whose telephone number is (571) 272-1312. The examiner can normally be reached on Mon. thru Fri. from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1751

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Gregory R. Del Cotto
Primary Examiner
Art Unit 1751

GRD
September 17, 2007